

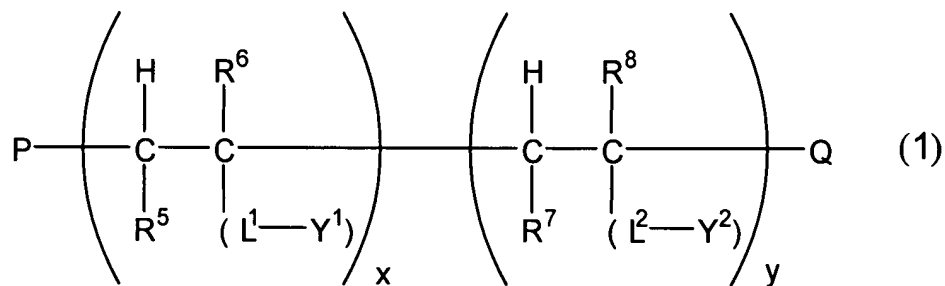
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-7. (canceled).

8. (currently amended): ~~An~~A porous insulating film formed by ~~using thermally treating~~ a film-forming composition comprising a hydrolysis product and/or a condensation product of a compound having a repeating unit represented by Formula (1) below:

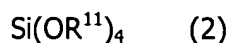


~~(in the formula, wherein~~ at least one of P and Q is a silane coupling group represented by $-\text{L}^3-\text{Si}(\text{R}^3)_m(\text{OR}^4)_{3-m}$, R^3 , R^4 , R^5 , R^6 , R^7 , and R^8 independently denote a hydrogen atom or a hydrocarbon group having 1 to 8 carbons, m denotes 0, 1, or 2, x denotes a range of 100 to 1 mol %, y denotes a range of 0 to 99 mol %, and P and Q denote terminal groups; L^1 , L^2 , and L^3 independently denote a single bond or a divalent organic linking group, Y^1 and Y^2 independently denote $-\text{N}(\text{R}^9)(\text{R}^{10})$, $-\text{OH}$, $-\text{NR}^0\text{COR}^9$, $-\text{CON}(\text{R}^9)(\text{R}^{10})$, $-\text{OR}^9$, $-\text{CONR}^9_2$, $-\text{COR}^9$, $-\text{CO}_2\text{M}$, $-\text{COOR}^9$, or $-\text{SO}_3\text{M}$, in which R^0 , R^9 , and R^{10} independently denote a hydrogen atom or an alkyl group having 1 to 8 carbons, R^0 and R^9 may form a ring structure, and M denotes a hydrogen atom, an alkali metal, an alkaline earth metal, or onium},

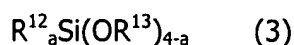
wherein said insulating film is porous.

9. (currently amended): The ~~porous~~-insulating film according to Claim 8, wherein L^1 and L^2 in Formula (1) are single bonds and L^3 is an alkylene-thio group.

10. (currently amended): The ~~porous~~-insulating film according to Claim 8, wherein the film-forming composition comprises a hydrolysis product and/or a condensation product of a compound represented by Formula (1) and at least one type of silane compound selected from the group consisting of a compound represented by Formula (2) below and a compound represented by Formula (3) below:



~~(in the formula, wherein~~ R^{11} denotes a monovalent organic group).



~~(in the formula, wherein~~ R^{12} denotes a hydrogen atom, a fluorine atom, or a monovalent organic group, R^{13} denotes a monovalent organic group or an organosilicon group, and a denotes an integer of 1 or 2).

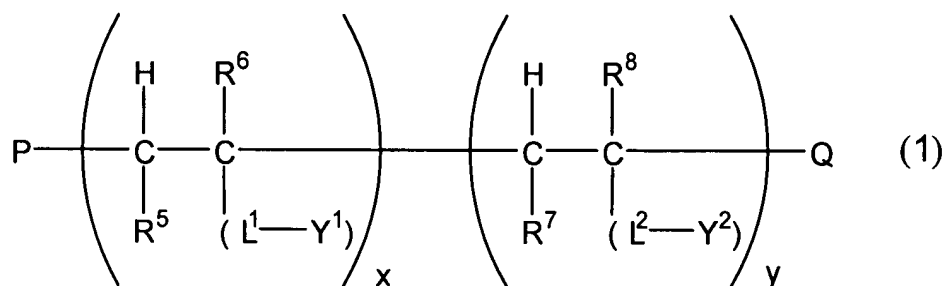
11. (currently amended): The ~~porous~~-insulating film according to Claim 10, wherein R^{11} in Formula (2) is an alkyl group having 1 to 5 carbons.

12. (currently amended): The ~~porous~~-insulating film according to Claim 10, wherein R^{12} and R^{13} in Formula (3) independently denote an alkyl group having 1 to 5 carbons.

13. (new): The insulating film according to Claim 8, wherein said film has a porosity of at least 20 vol% to at most 80 vol%.

14. (new): The insulating film according to Claim 8, wherein said film has a permittivity of 2.1 or less.

15. (new): A process for producing an insulating film, comprising the steps of providing a film-forming composition comprising a hydrolysis product and/or a condensation product of a compound represented by Formula (1) below:



wherein at least one of P and Q is a silane coupling group represented by $-\text{L}^3-$
 $\text{Si}(\text{R}^3)_m(\text{OR}^4)_{3-m}$, R^3 , R^4 , R^5 , R^6 , R^7 , and R^8 independently denote a hydrogen atom or a hydrocarbon group having 1 to 8 carbons, m denotes 0, 1, or 2, x denotes a range of 100 to 1 mol %, y denotes a range of 0 to 99 mol %, and P and Q denote terminal groups; L^1 , L^2 , and L^3 independently denote a single bond or a divalent organic linking group, Y^1 and Y^2 independently denote $-\text{N}(\text{R}^9)(\text{R}^{10})$, $-\text{OH}$, $-\text{NR}^0\text{COR}^9$, $-\text{CON}(\text{R}^9)(\text{R}^{10})$, $-\text{OR}^9$, $-\text{CONR}^9_2$, $-\text{COR}^9$, $-\text{CO}_2\text{M}$, $-\text{COOR}^9$, or $-\text{SO}_3\text{M}$, in which R^0 , R^9 , and R^{10} independently denote a hydrogen atom or an alkyl group having 1 to 8 carbons, R^0 and R^9 may form a ring structure, and M denotes a hydrogen atom, an alkali metal, an alkaline earth metal, or onium;

adding to the film-forming composition a porosifying compound that is compatible with or dispersible in the film-forming composition and has a boiling point or a decomposition temperature ranging between 250°C to 450°C, thereby forming a resulting composition;

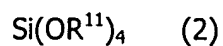
coating a substrate with the resulting composition comprising the film-forming composition and the porosifying compound to obtain a coated substrate;

heating the coated substrate at a temperature that is less than the boiling point or the decomposition temperature of the porosifying compound so as to partially cure the resulting film-forming composition, and

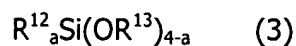
subsequently heating the coated substrate at a temperature that is equal to or higher than the boiling point or the decomposition temperature of the porosifying compound so as to further cure the resulting film-forming composition while generating a gas as a result of boiling or decomposition to obtain said insulating film, wherein said insulating film is porous.

16. (new): The process of claim 15, wherein L^1 and L^2 in Formula (1) are single bonds and L^3 is an alkylene-thio group.

17. (new): The process of claim 15, wherein the film-forming composition comprises a hydrolysis product and/or a condensation product of a compound represented by Formula (1) and at least one type of silane compound selected from the group consisting of a compound represented by Formula (2) below and a compound represented by Formula (3) below:



wherein R^{11} denotes a monovalent organic group,



wherein R^{12} denotes a hydrogen atom, a fluorine atom, or a monovalent organic group,
 R^{13} denotes a monovalent organic group or an organosilicon group, and a denotes an integer of
1 or 2.

18. (new): The process of claim 15, wherein the porosifying compound is a
compound having a polyalkylene oxide structure.